

CLAIMS:

1. A programmer for an implantable medical device, the programmer comprising:
an internal antenna mounted on a first circuit board,
a display device mounted on a second circuit board; and
wherein the first circuit board includes a substantially contiguous ground plane layer interrupted by a plurality of gaps.
2. The programmer of claim 1, wherein the gaps divide the ground plane layer into a plurality of conductive ground plane regions.
3. The programmer of claim 1, wherein the gaps divide the adjacent ground plane regions to disrupt flow of eddy currents within the ground plane layer.
4. The programmer of claim 1, wherein each of the gaps extends outward from a central region of the ground plane layer.
5. The programmer of claim 1, wherein the first circuit board includes an electrostatic discharge layer defining a peripheral conductive layer and a central aperture.
6. The programmer of claim 5, wherein the internal antenna defines an aperture, and the central aperture of the electrostatic discharge layer substantially approximates a size and shape of the aperture of the antenna.
7. The programmer of claim 5, wherein the electrostatic discharge layer is a first electrostatic discharge layer formed on a first side of the ground plane layer, the programmer further comprising a second electrostatic discharge layer formed on second side of the ground plane layer.

8. The programmer of claim 7, wherein the second electrostatic discharge layer defines a second central aperture that substantially approximates a size and shape of the central aperture of the first electrostatic discharge layer.
9. The programmer of claim 1, wherein the antenna comprises a loop-like antenna shape that defines an aperture.
10. The programmer of claim 1, further comprising a battery bay formed within the aperture of the antenna.
11. A programmer for an implantable medical device, the programmer comprising:
 - an internal antenna mounted on a first circuit board; and
 - a display device mounted on a second circuit board,wherein the antenna has a loop-like structure and defines a first aperture, and the first circuit board includes at least one signal plane with a electrostatic discharge layer defining a second aperture in substantially overlapping alignment with the first aperture.
12. The programmer of claim 11, further a substantially contiguous ground plane layer interrupted by a plurality of gaps.
13. The programmer of claim 12, wherein the gaps divide the ground plane layer into a plurality of conductive ground plane regions.
14. The programmer of claim 12, wherein the gaps divide the adjacent ground plane regions to disrupt flow of eddy currents within the ground plane layer.
15. The programmer of claim 12, wherein each of the gaps extends outward from a central region of the ground plane layer.

16. The programmer of claim 11, wherein the electrostatic discharge layer substantially approximates a size and shape of the aperture of the antenna.
17. The programmer of claim 11, wherein the electrostatic discharge layer is a first electrostatic discharge layer formed on a first side of the ground plane layer, the programmer further comprising a second electrostatic discharge layer formed on second side of the ground plane layer.
18. The programmer of claim 17, wherein the second electrostatic discharge layer defines a second central aperture that substantially approximates a size and shape of the central aperture of the first electrostatic discharge layer.
19. The programmer of claim 11, further comprising a battery bay formed within the aperture of the antenna.
20. The programmer of claim 11, wherein the first circuit board includes telemetry circuitry for communication with a medical device via the antenna.